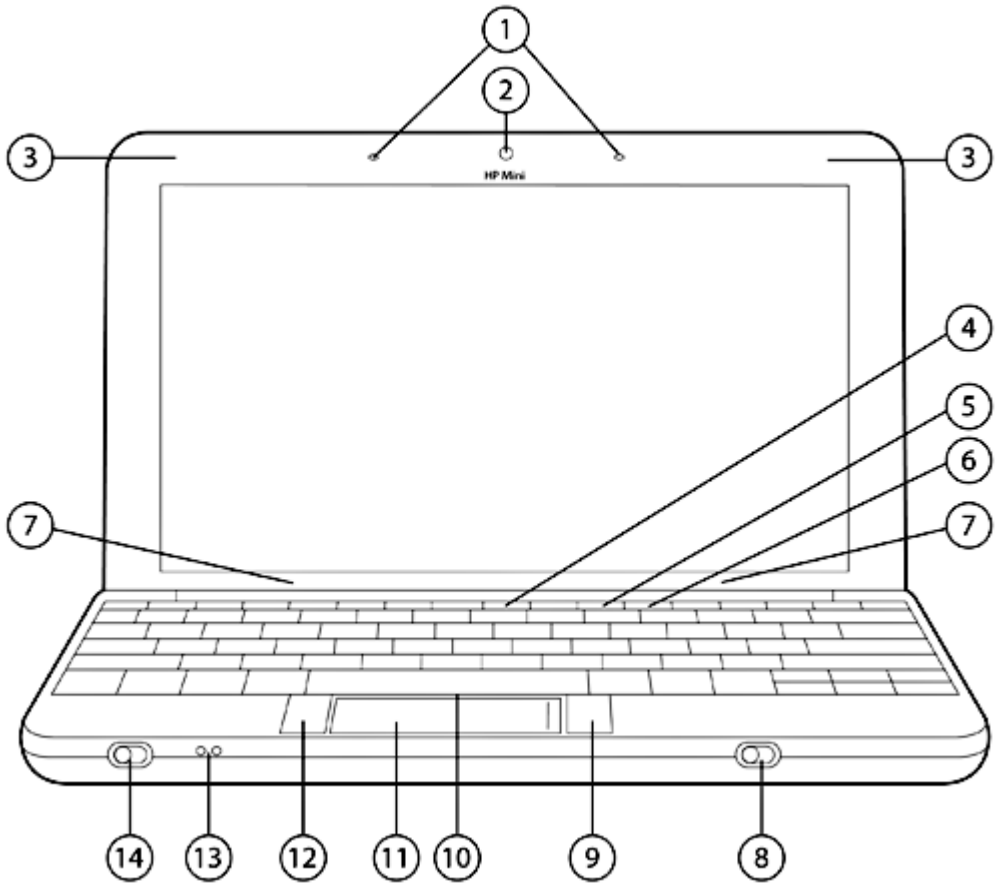
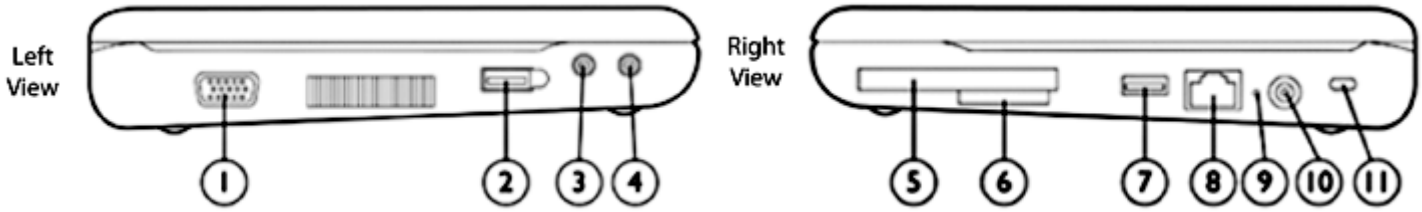
Overview

HP recommends
Windows Vista® Business

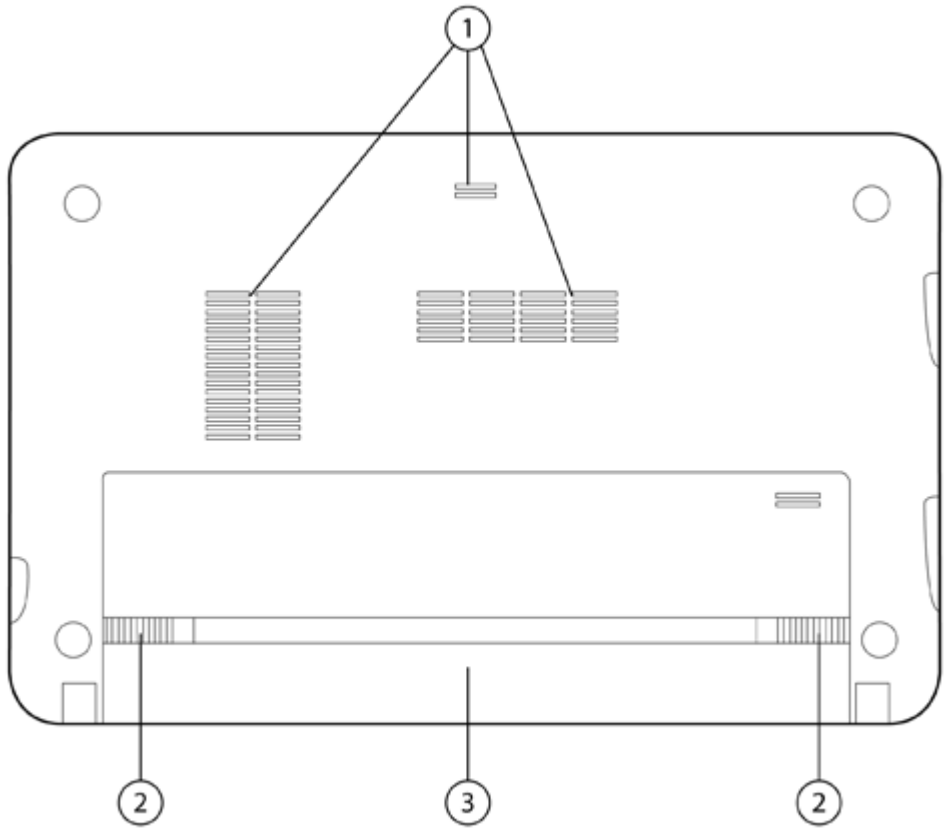


1. Integrated stereo microphones
2. VGA webcam
3. WLAN antennas (with WLAN option)
4. Volume mute function key
5. Volume down function key
6. Volume up function key
7. Stereo speakers
8. Wireless on/off button with LED
9. Right touchpad button
10. Touchpad on/off button
11. Touchpad with scroll zone
12. Left touchpad button
13. Internal storage activity / HP 3D DriveGuard LED
14. Power button with LED

Overview



1. VGA/external monitor
2. Powered USB 2.0
3. Stereo microphone in
4. Stereo headphone/line out
5. ExpressCard/54 slot
6. Secure Digital slot
7. USB 2.0
8. RJ-45/ethernet
9. Battery LED
10. Power connector
11. Kensington lock slot



Bottom View

1. Vents
2. Battery release latches
3. Battery bay

Overview

At A Glance

- Full-function PC with utmost mobility and durable all-anodized aluminum case
- Ultra-portable light-weight design starting at 2.6 lb (1.19 kg) and 1.05 in (26.7 mm) thin at front
- 10.1-inch diagonal 16:9 HP Illumi-Lite LED scratch-resistant display (1024 x 576 or 1366 x 768)
- Intel® Atom™ processor
- 92% full-size QWERTY keyboard with HP DuraKeys, touchpad with scroll zone
- Optional 802.11 a/b/g/n draft wireless LAN and Bluetooth, HP Wireless Assistant
- 80 GB Solid State Drive or up to 160 GB 7200 rpm hard drive with HP 3D DriveGuard (supported on Windows models only)
- Integrated VGA Webcam
- ExpressCard/54 slot
- Secure Digital slot for HCSD and MMC media cards
- Flexible battery solutions for lightest weight or all-day computing
- Upgradeable up to 2GB of DDR2 SDRAM

Standard Features

Processors	Intel Atom N270* Processor (1.6 GHz, 512 KB L2 cache, 533 MHz FSB) NOTE: Intel's numbering is not a measurement of higher performance. Processor speed denotes maximum performance mode; processor will run at lower speeds in battery optimization mode.	
Operating System	**Preinstalled**	Genuine Windows Vista Home Basic 32* Genuine Windows Vista Business 32* Genuine Windows Vista Business downgrade to Genuine Windows XP Professional installed*† Genuine Windows XP Home SuSE Linux Enterprise Desktop 10 FreeDOS
	Supported	Genuine Windows XP Professional
	* Certain Windows Vista product features require advanced or additional hardware. See: http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and http://www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit: http://www.windowsvista.com/upgradeadvisor. † Windows Vista Business disk also included for future upgrade if desired. To qualify for this downgrade an end user must be a business (including governmental or educational institutions) and is expected to order annually at least 25 customer systems with the same custom image.	
Chipset	Mobile Intel 945GSE Express Chipset	
Graphics	Mobile Intel Graphics Media Accelerator 950	
Display	**Internal**	10.1-inch diagonal 16:9 HP Illumi-Lite LED SD display with 1024 x 576 resolution 10.1-inch diagonal 16:9 HP Illumi-Lite LED HD display with 1366 x 768 resolution Scratch-resistant treatment on acrylic panel cover
	External	Up to 32-bit per pixel color depth VGA port supports resolutions up to 2048 x 1536 at 75 Hz, and lower resolutions at up to 100 Hz NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

Standard Features

Memory	**Standard**	1024 MB or 2048 MB 800 MHz* DDR2 SDRAM SODIMM; one SODIMM slot
	Maximum	Supports up to 2048 MB maximum

* Memory runs at the maximum system supported speed of 533 MHz.
NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility.

Communications	Integrated Marvell Ethernet (10/100/1000 NIC)	

Wireless Devices	Support for secure, integrated wireless LAN options featuring support for the latest industry standards. Wireless LAN is factory configurable only. Integrated Bluetooth is also available (factory configurable only) and can be combined with any of the supported wireless LAN options.	
	All 802.11 integrated wireless LAN options	Wi-Fi CERTIFIED* Cisco Compatible Extensions support (Version 4.0) Wired Equivalent Privacy (WEP) support up to 128-bit keys Wi-Fi Protected Access (WPA) and WPA2 support 802.1x authentication support, including EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and LEAP Advanced Encryption Standard (AES) support WiFi certified for WPA2, WMM Dual antennas integrated in the display enclosure
	Broadcom 4322AGN 802.11a/b/g/draft-n Wi-Fi Adapter	Integrated support for 802.11a, b, g, and n draft* Up to 300 mbps data rate
	Broadcom 4312G 802.11b/g Wi-Fi Adapter	Integrated support for 802.11 b and g Up to 54-mbps data rate
	HP Integrated Module with Bluetooth Wireless Technology	Bluetooth Specification v2.0 compliant Works with a wide range of Bluetooth devices

* The specifications for 802.11n draft are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11n WLAN devices. In countries where n draft is not allowed, this capability is not enabled.

Keyboard	Spill-resistant keyboard is 92% of full size, 101/102-key compatible with isolated inverted-T cursor control keys, both left and right control and alt keys, 12 function keys, and hotkey combinations for audio volume, power conservation, brightness, and other features. US and international key layouts are available.	

Pointing Device	Touchpad with scroll zone and two soft-touch buttons	

Expansion Card Slots	**ExpressCard/54 slot**	Supports ExpressCard/54 and ExpressCard/34
	Secure Digital slot	Supports HCSD (Secure Digital), MMC (MultiMedia Card)

Standard Features

Storage	Internal Storage Device	160 GB 5400 rpm SATA Hard Drive 160 GB 7200 rpm SATA Hard Drive 80 GB Solid State Drive
	NOTE: Hard drives are customer removable and will withstand multiple insertion/removal cycles. Up to 10 GB is reserved for the system recovery software.	
	HP 3D DriveGuard*	The hard drive is mounted to the notebook frame, reducing the transmission of shock away from the hard drive. Uses three-axis digital motion detection with intelligent sensitivity to help protect the hard drive during normal use from shock and vibration. The digital accelerometer temporarily halts all data transfer and parks the hard drive when abrupt motion is detected.
	External Optical Drives	Via optional HP External MultiBay II (9.5-mm): MultiBay II DVD-ROM Drive MultiBay II DVD+/-RW SuperMulti DL Drive
	* Windows models only	

Interfaces	ExpressCard/54 slot	Supports ExpressCard/54 and ExpressCard/34
	External Monitor	One - VGA
	Stereo Microphone In	One
	Stereo Headphone/Line out	One
	Power Connector	One
	RJ-45/Ethernet	One
	USB 2.0	Two (one powered)
	LED Status Indicators	Five

Audio/Visual	ADI1984HD High Definition CODEC 24-bit DAC Integrated stereo speakers Stereo headphone/line out Stereo microphone in Integrated VGA webcam

Standard Features

Software	Software with Windows Vista or Windows XP	MS Office Ready 2007 McAfee Total Protection* MS Live Messenger Adobe Flash Player Roxio Creator Business – Basic** Intervideo WinDVD** PDF Complete HP Webcam HP Recovery Manager (Vista only)
	Software with SuSE Linux Enterprise Desktop 10	OpenOffice Suite Evolution Email Evince Document Viewer OpenOffice Draw F-Spot Photo Brower Gnome CD/DVD Creator Helix Banshee Music Player Real Player 10 Media Player Firefox Web Browser Gaim Instant Messenger Gnome FTP File Transfer Liferea Feed Reader Mutt Mail Client

* 60 day trial period for McAfee Total Protection for Small Business software. Internet access required to receive updates. First update included. Subscription required for updates thereafter

** On systems with an external optical device

SMBIOS Version 2.4	System Management BIOS, previously known as DMI BIOS, is used to store system management information.

Security	Standard Features	HP Disk Sanitizer Configuration Control Hardware Memory Change Alert Ownership Tag Setup Password Power-On Password Kensington Lock Slot Support for Computrace / LoJack for Laptops (must be purchased separately)

Power Supply	External 65-watt Smart AC adapter, 6-foot (1.8-meter) power cord included. Total length including External AC adapter is 12 feet (3.66 meter). HP Fast Charge Technology* * Fast Charge Technology recharges your battery up to 90% within 90 minutes when the system is off.

Standard Features

Battery	**Primary Battery**	3-cell (28 WHr) high capacity Li-Ion 6-cell (55 WHr) high capacity Li-Ion

Battery Life		**With Hard Drive**	**With Solid State Drive**
	6-cell Primary Battery	Up to 8 hours and 30 minutes	Up to 10 hours
	3-cell Primary Battery	Up to 4 hours	Up to 5 hours

NOTE: The listed battery life measurements were taken on models running Microsoft Windows XP. Battery life will vary depending on the product configuration, product model, applications loaded on the product, power management settings of the product, and the product features used by the customer. As with all batteries, the maximum capacity of this battery will decrease with time and usage.

System Standby Time	Up to 1 week
Power Conservation	Standby ACPI compliance
Service and Support	HP Services includes a one-year standard parts and labor warranty, pick-up or carry-in, and toll-free 7 x 24 hardware technical phone support (depending on model). On-site service and warranty upgrades are also available (depending on model). For configurations with SuSE Linux Enterprise Desktop 10, HP Services may vary depending on the country of purchase, and toll-free 5 x 8 (Monday through Friday; 9:00am to 5:00pm CST) hardware technical phone support is available. NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp.

Select Model(s)

2140
SKU Part#
KS143UT#ABA (English)
KS143UT#ABC (Fr CAN)

Smart Buy

Processor	Intel Atom N270 (1.6GHz, 512KB L2 cache, 533MHz FSB)
Operating System	Genuine Windows XP Home Edition
System Memory	1024 MB 800-MHz DDR2 (1 DIMM) (runs at 533MHz)
Hard Drive	160-GB 5400 rpm
Display	10.1-inch diagonal HP Illumi-Lite LED SD (1024x576) Integrated VGA camera
Graphics	Mobile Intel GMA 950
Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
Communications	Integrated Marvell Ethernet (10/100/1000 NIC)
Integrated Wireless	Broadcom 802.11a/b/g – draft n; Bluetooth 2.0
Pointing Device	Touchpad with scroll zone
Battery	3-cell (28 WHr) Lithium-Ion
Power	External 65W adapter

Standard Features

	Warranty	1/1/0

2140 SKU Part# KS144UA#ABA (English) KS144UA#ABC (Fr CAN) Regional	Processor	Intel Atom N270 (1.6GHz, 512KB L2 cache, 533MHz FSB)
	Operating System	Genuine Windows XP Home Edition
	System Memory	1024 MB 800-MHz DDR2 (1 DIMM) (runs at 533MHz)
	Hard Drive	160-GB 5400 rpm
	Display	10.1-inch diagonal HP Illumi-Lite LED SD (1024x576) Integrated VGA camera
	Graphics	Mobile Intel GMA 950
	Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
	Communications	Integrated Marvell Ethernet (10/100/1000 NIC)
	Integrated Wireless	Broadcom 802.11a/b/g – draft n
	Pointing Device	Touchpad with scroll zone
	Battery	3-cell (28 WHr) Lithium-Ion
	Power	External 65W adapter
	Warranty	1/1/0

2140 SKU Part# KS145UT#ABA (English) KS145UT#ABC (Fr CAN) Smart Buy	Processor	Intel Atom N270 (1.6GHz, 512KB L2 cache, 533MHz FSB)
	Operating System	Genuine Windows Vista Home Basic 32
	System Memory	2048 MB 800-MHz DDR2 (1 DIMM) (runs at 533MHz)
	Hard Drive	160-GB 5400 rpm
	Display	10.1-inch diagonal HP Illumi-Lite LED SD (1024x576) Integrated VGA camera
	Graphics	Mobile Intel GMA 950
	Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
	Communications	Integrated Marvell Ethernet (10/100/1000 NIC)
	Integrated Wireless	Broadcom 802.11a/b/g – draft n; Bluetooth 2.0
	Pointing Device	Touchpad with scroll zone
	Battery	3-cell (28 WHr) Lithium-Ion
	Power	External 65W adapter
	Warranty	1/1/0

Standard Features

2140 SKU Part# KS146UT#ABA (English) KS146UT#ABC (Fr CAN) Smart Buy	Processor	Intel Atom N270 (1.6GHz, 512KB L2 cache, 533MHz FSB)
	Operating System	Genuine Windows Vista with downgrade to Genuine Windows XP Professional custom installed
	System Memory	2048 MB 800-MHz DDR2 (1 DIMM) (runs at 533MHz)
	Hard Drive	160-GB 7200 rpm
	Display	10.1-inch diagonal HP Illumi-Lite LED SD (1024x576) Integrated VGA camera
	Graphics	Mobile Intel GMA 950
	Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
	Communications	Integrated Marvell Ethernet (10/100/1000 NIC)
	Integrated Wireless	Broadcom 802.11a/b/g – draft n; Bluetooth 2.0
	Pointing Device	Touchpad with scroll zone
	Battery	3-cell (28 WHr) Lithium-Ion
	Power	External 65W adapter
	Warranty	1/1/0

2140 SKU Part# KS146UA#ABA (English) KS146UA#ABC (Fr CAN) Regional	Processor	Intel Atom N270 (1.6GHz, 512KB L2 cache, 533MHz FSB)
	Operating System	Genuine Windows Vista with downgrade to Genuine Windows XP Professional custom installed
	System Memory	2048 MB 800-MHz DDR2 (1 DIMM) (runs at 533MHz)
	Hard Drive	160-GB 7200 rpm
	Display	10.1-inch diagonal HP Illumi-Lite LED SD (1024x576) Integrated VGA camera
	Graphics	Mobile Intel GMA 950
	Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
	Communications	Integrated Marvell Ethernet (10/100/1000 NIC)
	Integrated Wireless	Broadcom 802.11a/b/g – draft n; Bluetooth 2.0
	Pointing Device	Touchpad with scroll zone
	Battery	3-cell (28 WHr) Lithium-Ion
	Power	External 65W adapter
	Warranty	1/1/0

Standard Features

2140 SKU Part# KS157UT#ABA (English) KS157UT#ABC (Fr CAN) Smart Buy	**Processor**	Intel Atom N270 (1.6GHz, 512KB L2 cache, 533MHz FSB)
	Operating System	Genuine Windows XP Home Edition
	System Memory	1024 MB 800-MHz DDR2 (1 DIMM) (runs at 533MHz)
	Hard Drive	160-GB 5400 rpm
	Display	10.1-inch diagonal HP Illumi-Lite LED SD (1024x576) Integrated VGA camera
	Graphics	Mobile Intel GMA 950
	Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
	Communications	Integrated Marvell Ethernet (10/100/1000 NIC)
	Integrated Wireless	Broadcom 802.11a/b/g – draft n; Bluetooth 2.0
	Pointing Device	Touchpad with scroll zone
	Battery	6-cell (55 WHr) Lithium-Ion
	Power	External 65W adapter
	Warranty	1/1/0

2140 SKU Part# KS157UA#ABA (English) KS157UA#ABC (Fr CAN) Regional	**Processor**	Intel Atom N270 (1.6GHz, 512KB L2 cache, 533MHz FSB)
	Operating System	Genuine Windows XP Home Edition
	System Memory	1024 MB 800-MHz DDR2 (1 DIMM) (runs at 533MHz)
	Hard Drive	160-GB 5400 rpm
	Display	10.1-inch diagonal HP Illumi-Lite LED SD (1024x576) Integrated VGA camera
	Graphics	Mobile Intel GMA 950
	Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
	Communications	Integrated Marvell Ethernet (10/100/1000 NIC)
	Integrated Wireless	Broadcom 802.11a/b/g – draft n; Bluetooth 2.0
	Pointing Device	Touchpad with scroll zone
	Battery	6-cell (55 WHr) Lithium-Ion
	Power	External 65W adapter
	Warranty	1/1/0

Options

Memory	HP 1 GB (DDR2 800 MHz) SODIMM*	KT292AA
	HP 2 GB (DDR2 800 MHz) SODIMM*	KT293AA
	* Runs at maximum system supported speed of 533 MHz	
Storage	HP USB Diskette Drive	DC361B
	HP 250 GB Pocket Media Drive	FE477AA
MultiBay II Storage (9.5-mm)	HP External MultiBay II	PA509A#ABA
	HP MultiBay II DVD-ROM Drive	PA849A
	HP MultiBay II DVD+/-RW SuperMulti DL Drive	PA851A
Power	HP 1-bay Battery Charging Station	RW635AA#ABA
	HP 5-bay Battery Charging Station	RW636AA#ABA
	HP 2133/2140 Battery Adapter Kit	TBD
	HP KU528AA Adapter Kit	KV828AA
	HP 65W Smart AC Adapter	ED494AA#ABA
	HP 90W Smart AC/Auto/Air Combo Adapter	AJ652AA#ABA
	HP 2133/2140 6-cell Primary Battery	KU528AA
Carrying Cases	HP Mini Slip Case	AM847A
	HP Ultra-portable Carrying Case	AL539AA
	HP Basic Carrying Case	AJ078AA
	HP Value Nylon Case	RR314AA
	HP Universal Nylon Case	RR315AA
	HP Executive Leather Case	RR316AA
	HP Deluxe Nylon Backpack	RR317AA
Security	HP/Kensington MicroSaver Security Lock	PC766A
Input/Output Devices	HP USB Keyboard & Mouse Bundle	RC465AA#xxx
	HP USB/PS2 Optical 2-Button Scroll Mouse	DC369A
	HP USB Optical Travel Mouse	RH304AA

Memory

Supports up to 2048 MB of 800 MHz* DDR2 SDRAM
One DIMM slot
DIMM sizes supported: 1024 MB and 2048 MB

Standard Memory	1024 MB (1024 MB x 1) 2048 MB (2048 MB x 1)

Optional Memory Upgrades	Memory slot is user accessible. Please refer to the Hardware and Software Guide for installation procedures.

NOTE: Due to the non-industry standard nature of some third-party memory modules, we strongly recommend using only HP branded memory modules to ensure compatibility.

Memory Upgrades	HP 2 GB (DDR2 800 MHz*) SODIMM	KT293AA

* Runs at maximum system supported speed of 533 MHz

Storage

Internal Storage Device

Hard Drives (SMART SATA)	Quantity Supported	Drive Bay
160 GB 5400 rpm	One	Dedicated hard drive bay
160 GB 7200 rpm	One	Dedicated hard drive bay
Solid State Drive		
80 GB Solid State Drive	One	Dedicated hard drive bay

Optical Drive Support

External Optical Drives	Quantity Supported	Optional Expansion Unit
MultiBay II DVD-ROM Drive MultiBay II DVD+/-RW SuperMulti DL Drive	One	HP External MultiBay II

System Unit	Dimensions (HxWxD)		1.05 (at front) x 10.30 x 6.54 in 26.7 (at front) x 261.4 x 166.2 mm
	Weight		Starting at 2.6 lb (1.19 kg)
	NOTE: Height varies depending upon where on the notebook the measurement is made. Weight includes 3-cell battery, 1 GB memory, 160 GB hard drive, 802.11 wireless communications module. Weight varies by configuration and components.		
	Stand-Alone Power Requirements	Normal Operating Voltage	19 V
		Average Operating Power	25 W
		Max Operating Power	< 65 W
	Temperature	Operating	32° to 95° F (0° to 35° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Relative Humidity	Operating	10% to 90%, non-condensing
		Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
	Shock	Operating	125 G, 2 ms, half-sine
		Non-operating	200 G, 2 ms, half-sine
	Random Vibration	Operating	0.75 grms
		Non-operating	1.50 grms
	Altitude (unpressurized)	Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
		Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
	Industry Standard Certifications	UL	Yes
		CSA	Yes
		FCC Compliance	Yes
		ENERGY STAR®	Yes*
		EPEAT	Gold**
		ICES	Yes
		Australia / NZ A-Tick Compliance	Yes
		CCC	Yes
		Japan VCCI Compliance	Yes
		MIC	Yes
		BSMI	Yes
		CE Marking Compliance	Yes
		BNCI or BELUS	Yes
		CIT	Yes
		GOST	Yes
		Saudi Arabian Compliance (ICCP)	Yes
		SABS	Yes
		UKRSERTCOMPUTER	Yes

* Configurations of the HP Mini 2140 that are ENERGY STAR qualified are identified as HP Mini 2140 ENERGY STAR on HP websites and on www.energystar.gov.

** EPEAT registration varies by country. See www.epeat.net for registration status by country. EPEAT status listed above applies to U.S.

Power

HP 65W Smart AC Adapter	Dimensions	4.17 x 1.85 x 1.1 in (10.6 x 4.7 x 2.8 cm)	
	Weight	0.62 lb (280 g)	
	Input	100 to 240 VAC	
		Input Efficiency	83% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	1.7 A at 90 VAC, 0.85 A at 180 VAC
	Output	Output power 65W	65W
		DC output	18.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords	
	Environmental Design	Operating temperature	32° to 104° F (0° to 40° C)
		Non-operating (storage) temperature	-4° to 149° F (-20° to 65° C)
		Altitude	0 to 10,000 ft (0 to 3,048 m)
		Humidity	20% to 80%
		Storage Humidity	10% to 90%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives; Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF - over 200,000 hours at 25°C ambient condition.	

Technical Specifications

6-Cell (55 WHr) Lithium-on battery	Dimensions (HxWxL)	1.69 x 1.57 x 8.19 in (4.3 x 4 x 20.8 cm)	
	Weight	0.77 lb (0.35 kg)	
	Cells/Type	6-cell Lithium-Ion	
	Energy	Watt-hour Capacity	55Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (-10° to 60° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Battery Re-Charge Time	System in OFF Mode or Standby	2.5 hours
		System ON	3 to 5 hours (depending on system power consumption)
		HP Fast Charge Technology	Charges the battery up to 90% within 90 minutes when system is OFF
	Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery	
3-Cell (28.8 WHr) Lithium-on battery	Dimensions (HxWxL)	1.69 x 0.79 x 8.19 in (4.3 x 2 x 20.8 cm)	
	Weight	0.39 lb (0.176 kg)	
	Cells/Type	3-cell Lithium-Ion	
	Energy	Watt-hour Capacity	28.8 WHr
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (-10° to 60° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Battery Re-Charge Time	System in OFF Mode or Standby	2.5 hours
		System ON	3 to 5 hours (depending on system power consumption)
		HP Fast Charge Technology	Charges the battery up to 90% within 90 minutes when system is OFF
Display			

Technical Specifications

10.1-inch diagonal 16:9 SD Display	Active Area (W x H)	8.77 x 4.93 in (22.27 x 12.52 cm)	
	Diagonal Size	10.1 in (25.7 cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	400:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	217 mm
		Format	1024 x 576
		Configuration	RGB Vertical Stripe
	Backlight	LED	
	PPI	117	
	Viewing Angle	±30° Horizontal, ±10° Vertical (typical)	

10.1-inch diagonal 16:9 HD Display	Active Area (W x H)	8.77 x 4.93 in (22.27 x 12.52 cm)	
	Diagonal Size	10.1 in (25.7 cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	400:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	164 mm
		Format	1366 x 768
		Configuration	RGB Vertical Stripe
	Backlight	LED	
	PPI	155	
	Viewing Angle	±30° Horizontal, ±10° Vertical (typical)	

Internal Storage

Technical Specifications

160 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lb (113 g)	
	Capacity	160 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	1 ms
		Average	10 ms
		Maximum	18 ms
	Rotational Speed	7200 rpm	
	Logical Blocks	312,581,808	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	
160 GB 5400 rpm SATA Hard Drive	Drive Weight	0.22 lb (101 g)	
	Capacity	160 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	312,581,808	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

Technical Specifications

80 GB 2.5" SATA Solid State Drive	Weight	0.19 lbs (86 g)	
	Capacity	80 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 2.6	
	Performance	Maximum Sequential Read	250 MB/s
		Maximum Sequential Write	70 MB/s
	Logical Blocks	156,301,488	
	Operating Temperature	32° to 158°F (0° to 70°C) [case temp]	
	Features	ATA Security	

Removable Storage Drives - MultiBay II

DVD-ROM Drive	Dimensions	0.37 x 5.51 x 5.04 in (0.95 x 14.0 x 12.8 cm)	
	Weight	0.34 lb (155 g)	
	Access Times	Random	<120 ms CD
			<200 ms DVD
	Max Data Transfer Rate	24X-CD-ROM	3,600 KB/s
		8X-DVD	10,800 KB/s
	Transfer Mode	Multiword DMA Mode 2	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW	
	Supported Media (write)	None	
	Max Media Capacity (read)	8.5 GB	
	Transport	Tray Loading	

Technical Specifications

DVD+/-RW SuperMulti DL Drive	Dimensions	0.37 x 5.51 x 5.04 in (0.95 x 14.0 x 12.8 cm)	
	Weight	0.45 lb (205 g)	
	Access Times	Random	<150 ms CD
			<125 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		10X CD-RW	1,500 KB/s
		4X DVD+R	5,400 KB/s
		2.4X DVD+RW	3,240 KB/s
		4X DVD-R	5,400 KB/s
		2X DVD-RW	2,700 KB/s
		2X DVD-RAM	2,700 KB/s
	Transfer Mode	Multiword DMA Mode 2	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	8.5 GB	
	Transport	Tray Loading	

PremierSound Audio

Hardware	Implementation	ADI1984HD High Definition CODEC
	Volume Controls	Up, down, and mute function keys
	Full Duplex	Yes
	Sound Blaster Pro compatible	Yes
	Microphone Jack	Stereo or mono
	Headphone/Line Out Jack	Stereo

Technical Specifications

Audio Output Quality	Frequency Response	20 Hz - 20 kHz
	Signal to Noise Ratio	>85 dB
	Total Harmonic Distortion	0.01%
	Noise Floor	-110 dB
	Play/Record Sampling Rate(s)	8 kHZ - 48kHz
	DAC	16, 20 or 24-bit
	ADC	16 or 20-bit
Internal Speakers	Power Rating	2 Watts
	Impedance	4 Ohms

Communications

Broadcom 4322AGN 802.11a/b/g/draft-n WiFi Adapter	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n draft
	Interoperability	Wi-Fi certified (802.11abg only) Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN) Tested with wireless access points from several major manufacturers (details at: http://www.hp.com/go/notebooks/WLAN/draft-n)
	Frequency Band	2.4 GHz and 5 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n (draft): 6, 6.5, 9, 12, 13, 13.5, 18, 19.5, 24, 26, 27, 36, 39, 40.5, 48, 52, 54, 58.5, 65, 78, 81, 104, 108, 117, 121.5, 130, 135, 162, 216, 243, 270, 300 Mbps
	Frequency Support	20 MHz: 2.4 GHz and 5 GHz bands 40 MHz: 2.4 GHz and 5 GHz band
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK

Network Architecture	Ad-hoc (Peer to Peer)	
Models	Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output Power (for CKK)[2]	17 dBm	
Output Power (for OFDM; power varies by data rate)[2]	15 dBm	
Power Consumption	Idle associated: 250 mW Idle unassociated: 150 mW Transmit/Receive 20 MHz channel: 2.0 W (max) Transmit/Receive 40 MHz channel: 2.0 W (max)	
Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[3]	270 Mbps: -66dBm, 162 Mbps: -72 dBm, 54 Mbps: -72 dBm, 11 Mbps: -85 dBm , 1 Mbps: -94 dBm	
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure	
Range	802.11 a - Typical (@6 Mbps)	600 feet - Outdoor Open Area 150 feet - Indoor, Office environment
	802.11 b - Typical (@1 Mbps)	1200 feet - Outdoor Open Area 300 feet - Indoor, Office environment
	802.11 g - Typical (@1 Mbps)	1200 feet - Outdoor Open Area 300 feet - Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.026 lb (12 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating Non-operating	14° to 149° F (-10° to 65° C) -40° to 176° F (-40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
Configuration Utility[4]	Microsoft Windows XP Choice of Configuration Utility: • Microsoft Windows XP Wireless Network Connection Manager • Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support) Microsoft Windows Vista • Microsoft Windows Vista Wireless Network Connection Manager • Broadcom IHV extensions for Windows Vista available to support Cisco Compatible Extensions.	
LED Activity	LED Off - Radio OFF; Solid LED On - Radio ON	

1. Check latest software/driver release for updates on supported security features.

2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

Broadcom 4312G 802.11b/g WiFi Adapter	Wireless LAN Standards	IEEE 802.11b IEEE 802.11g
	Interoperability	Wi-Fi certified (802.11bg only) Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN) Tested with wireless access points from several major manufacturers (details at: http://www.hp.com/go/notebooks/WLAN/draft-n)
	Frequency Band	2.4 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
	Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power (for CKK)[2]	17 dBm
	Output Power (for OFDM; power varies by data rate)[2]	15 dBm
	Power Consumption	Idle associated: 250 mW Idle unassociated: 150 mW Transmit: 2.0 W (max) Receive: 2.0 W (max)
	Power Management	ACPI compliant power management 802.11 compliant power saving mode
	Receiver Sensitivity[3]	54 Mbps: -71 dBm, 11 Mbps: -85 dBm , 1 Mbps: -95 dBm
	Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure

Range	802.11 b - Typical (@1 Mbps)	1200 feet - Outdoor Open Area 300 feet - Indoor, Office environment
	802.11 g - Typical (@1 Mbps)	1200 feet - Outdoor Open Area 300 feet - Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.026 lb (12 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating Non-operating	14° to 149° F (-10° to 65° C) -40° to 176° F (-40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
Configuration Utility[4]	Microsoft Windows XP Choice of Configuration Utility: • Microsoft Windows XP Wireless Network Connection Manager • Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support) Microsoft Windows Vista • Microsoft Windows Vista Wireless Network Connection Manager • Broadcom IHV extensions for Windows Vista available to support Cisco Compatible Extensions.	
LED Activity	LED Off - Radio OFF; Solid LED On - Radio ON	

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

HP Integrated Module with Bluetooth Wireless Technology

Bluetooth Specification	2.0 Compliant
Dimensions	1.02 x 0.55 x 0.22 in (26 x 14 x 5.7 mm)
Frequency Band	2402 to 2480 MHz
Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	-6 dBm to 4 dBm (Bluetooth Class II)

Receiver Sensitivity	Better than -80 dBM at 0.1 % raw bit error rate	
Power Consumption	Peak (Tx) 264 mW	
	Peak (Rx) 231 mW	
	Sleep <1 mW	
Antenna	Internally integrated within module	
Range	Up 33 ft (10 m)	
Electrical Interface	USB 2.0 compliant	
	Microsoft Windows Plug and Play compliant	
OS Support	Genuine Windows Vista	
	Genuine Windows XP	
	Genuine Windows 2000	
Bluetooth Software Supported	Broadcom Bluetooth for Windows	
	Microsoft Windows XP Bluetooth Software	
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves	
Security	Full support of Bluetooth Security Provisions	
Power Management	Microsoft Windows ACPI, and USB Bus Support	
	Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff	
Certifications	All necessary regulatory approvals for supported countries, including:	
	FCC (47 CFR) Part 15C, Section 15.247 & 15.249	
	ETS 300 328, ETS 300 826	
	Low Voltage Directive IEC950	
	UL, CSA, and CE Mark	
Temperature	Operating	-4° to 158° F (-20° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90%
	Non-operating	5% to 95%
Altitude	Operating	15,000 ft (4,572 m)
	Non-operating	40,000 ft (12,192 m)
Bluetooth Profiles Supported	(with Bluetooth for Windows 4.0 software)	
	Serial Port Profile (SPP)*	
	Dial-Up Networking (DUN)*	
	Generic Object Exchange Profile (GOEP)	
	Object Push Profile (OPP)*	
	File Transfer Profile (FTP)	
	Synchronization Profile (SYNC)	
	Hard Copy Cable Replacement (HCRP)*	
	Personal Area Networking Profile (PAN)*	
	Human Interface Device Profile (HID)*	
	FAX Profile (FAX)	
	Basic Imaging Profile (BIP)	

Headset Profile (HSP)
Hands Free Profile (HFP)
Advanced Audio Distribution Profile (A2DP)

* indicates the profile is also supported by Microsoft Windows XP SP2

Eco Data

Eco-Label Certifications

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US Energy Star
- IT ECO declaration
- EPEAT – Gold

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Convertible Mini tower Desktop model is based on a "Typically Configured Notebook"

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	9.67W	10.45W	9.84W
Sleep (Energy Star low power mode)	1.35W	1.39W	1.35W
Off	0.64W	0.68W	0.65W

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	33 BTU/hr	36 BTU/hr	34 BTU/hr
Sleep	5 BTU/hr	5 BTU/hr	5 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.0	25.3
Fixed Disk (random writes)	3.0	26.2

System fan is usually off except when charging the battery

Batteries

This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- U Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 4000 ppm by weight.

The battery type and chemistry used in the product is:
CR2032 (coin cell), Lithium
High capacity Lithium-Ion battery
This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2002/95/EC.

Additional information:

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive –2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see: www.epeat.net

Keyboard complies with ISO standard: ISO 9995, EN 29241-4, and ISO/IEC 15412

Input devices of this product comply with ISO 9241, part 9.

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post consumer recycled plastic (by wt.)

This product is greater than 95.2% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
  - Corrugated carton – 550g
  - Cardboard & misc. – 45g
- Internal:
  - Polyethylene low density – 15g
  - EPE-Expanded Polyethylene – 50g
- Corrugated carton packaging material is made from 100% recycled content.
- Cardboard & misc. packaging materials contains at least 100% recycled content.
- Polyethylene low density packaging materials contains at least 100% recycled content.
- EPE-Expanded Polyethylene packaging materials contains at least 15% recycled content.

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury

and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment (http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel - finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett

	Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Environment website http://www.hp.com/environment Eco-label certifications http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html

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